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EXAMINER	
KEEHN, RICHARD G	

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2456	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,322	CALINESCU ET AL.	
	Examiner	Art Unit	
	RICHARD G. KEEHN	2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-8,10,11,16-18,20,23,26,28,60,61,63,64,70 and 71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-8,10,11,16-18,20,23,26,28,60,61,63,64,70 and 71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1, 2, 6-8, 10, 11, 16-18, 20, 23, 26, 28, 60, 61, 63, 64, 70 and 71 have been examined and are pending.**

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/30/2009 has been entered.

Response to Arguments

3. Applicant's arguments, see Page 11, filed 9/30/2009, with respect to objection to the specification have been fully considered and are persuasive. The objection to the specification has been withdrawn.

4. Applicant's arguments filed 9/30/2009 have been fully considered but they are not persuasive.

a. Applicant's arguments with respect to Claims 1-3 and 6-28 rely upon the cited prior art references, Kirkby et al. and Watt, allegedly teaching centralized systems and therefore allegedly do not teach a distributed system to allocate resources. However, it is clear in Kirkby et al.'s abstract and in Column 3, lines

49-52 that both centralized and distributed embodiments are disclosed. Kirkby et al.'s Figure 1 supports this distributed disclosure since element 50 is not centrally coupled, hence does not centrally control or communicate, with elements 6, 10, 22 and 27. Therefore, Applicant's arguments are not persuasive.

b. Applicant's arguments with respect to Claims 60-64, 66-67, 70 and 71 rely upon the allegation that "Combs concern allocated resources but do not concern the decision of how to allocate the resources." Applicant uses a hypothetical example not related to any claim for support. Clearly, as indicated in the previous Office action, Combs et al. disclose ***receiving*** user input specifying priorities (Column 11, lines 4-6 and 35-36 and Column 10, lines 29-31), ***selecting*** a given application based upon the specified priorities (Column 10, lines 32-34), ***allocating*** to the application resources (Column 11, lines 35-38), ***and repeating*** based upon specified priorities (Column 10, lines 32-34). This clearly indicates "***the decision of how to allocate the resources***." Therefore Applicant's argument is unpersuasive.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 2, 6-8, 10, 11, 16-18, 20, 23, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,498,786 B1 (Kirkby et al.), and further in view of US 2003/0126202 A1 (Watt).

As to Claim 1, Kirkby et al. disclose a system for allocating resources amongst a plurality of applications running in a distributed, multiprocessor computing environment, the system comprising:

a distributed {resource allocation system} (Kirkby et al.'s abstract and in Column 3, lines 49-52 disclose that both centralized and distributed embodiments are disclosed);

a monitoring module at each computer for detecting demands for one or more resources located on the computer and exchanging information amongst the plurality of computers regarding demands for the one or more resources (Kirkby et al. – Column 4, lines 3-13 recite bandwidth being allocated by each local controller detecting and taking into account the relative demands of all of the resources in the network; Kirkby et al. – Column 3, lines 39-40 recite the plurality of users exchanging their input which effects demand on the system);

a distributed policy engine for specifying a policy for allocation of resources of the plurality of computers amongst the plurality of applications having access to the resources, wherein the distributed policy engine bases the policy on the demands for the one or more resources, monitors the system to determine when one or more conditions exist, and adapts the policy based on of the one or more conditions, and

wherein the policy engine is distributed on each computer in the plurality of computers (Kirkby et al. – Column 1, lines 6-13 and Column 3, lines 37-47 and Column 6, lines 63-67 and Column 5, lines 19-22 and Column 14, lines 44-46 recite the policy based on proportional fairness and user input to control resource allocation amongst the distributed network's resources; Column 3, line 52 recites the distributed embodiment, the demands being generated by willingness to pay and behavior of the system being the way in which the system changes its behavior based on, inter alia, user input); and

an enforcement module at each computer for allocating the resources amongst the plurality of applications based on a decision made by the policy engine (Kirkby et al. – Column 3, lines 37-52 recite the controller determining how the users' willingness to pay are to be divided between the resources in order to determine the relative demands for the resources. Each resources is then divided based on the policy of fairness based on willingness to pay for resources. A user interface is provided to allow the user to influence the allocation by changing the willingness to pay).

Kirkby et al. do not explicitly disclose server pools and director of server pools, but Watt discloses

a plurality of server computers in a server pool, wherein each server comprises (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

a server pool director for organizing and maintaining the plurality of servers in the server pool (Watt – Page 4, ¶ [0049] recites the server pool load manager making

decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

server computer in the server pool (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

located on the server computer (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

amongst the plurality of server computers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

at the plurality of servers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

of the plurality of server computers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

server computer in the plurality of server computers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool); and

server computer (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine server pool management taught by Watt, with policy-based resource management in distributed systems taught by Kirkby et al., in order to streamline resource allocation and provisioning (Watt- Abstract).

As to Claim 2, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the resources include one or more of communication resources, network bandwidth, processing resources, memory, disk space, system I/O (input/output), printers, tape drivers, and software licenses (Kirkby et al. - Column 1, lines 6-13 recite the resources including network bandwidth resources),

wherein one or more conditions comprises the existence of another program and interdependencies between applications running on the system (Kirkby et al. - Column 1, lines 6-13 recite the user voice programs and interdependency of sharing network bandwidth).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 6, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the policy engine receives user input for defining an application subject to the policy, wherein the user input includes defining components of an application (Kirkby et al. – Column 3, lines 47-52 recite the user input to modify willingness to pay for resources).

As to Claim 7, the combination of Kirkby et al. and Watt discloses the system of claim 6,

wherein the monitoring module identifies an application running at a given server computer based, at least in part, upon the user input for defining the application (Kirkby et al. – Column 6, lines 49-67 recite the iterative commands executed to reallocate resources based on monitored changes in user input values for defining user willingness to pay to the fairness policy function).

As to Claim 8, the combination of Kirkby et al. and Watt discloses the system of claim 7,

wherein the monitoring module detects a request for resources by the application at the given server computer (Kirkby et al. – Column 6, lines 49-67 recite the iterative commands executed to reallocate resources based on monitored changes in user input values for defining user willingness to pay to the fairness policy function e.g. user is added).

As to Claim 10, the combination of Kirkby et al. and Watt discloses the system of claim 6,

wherein the components include a selected one of processes, network traffic, and J2EE components (Kirkby et al. – Column 10, lines 27-41 recite the user defining the time of transfer and amount of bandwidth which define network traffic for the application).

As to Claim 11, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the policy engine receives user input of a policy specifying actions to be taken for allocation of the resources in response to particular conditions (Kirkby et al. – Column 6, lines 49-67 recite the iterative commands executed to reallocate resources based on changes in input values to the fairness policy function),

wherein the policy includes one or more of an attribute indicating when a particular condition of the policy is to be evaluated, a command to be run in response to a particular condition, an attribute indicating when action is to be taken based upon a particular condition of the policy being satisfied and priorities of the plurality of applications to the resources (Kirkby et al. – Column 6, lines 49-67 recite the attribute of WtP, any change of which invokes the policy to redefine allocations based on the changes in either resources available of user willingness to pay for resources).

As to Claim 16, the combination of Kirkby et al. and Watt discloses the system of claim 11,

wherein the enforcement module allocates resources amongst the plurality of applications based, at least in part, upon the specified priorities (Kirkby et al. – Column 3, lines 45-64 recite user application priority set based on willingness to pay, and the distributed method of resource allocation based on the priorities the users set, based on willingness to pay).

As to Claim 17, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the policy engine includes a user interface for a user to specify one or more priorities of the plurality of applications (Kirkby et al. – Column 3, lines 37-52 recite the controller determining how the users' willingness to pay are to be divided between the resources in order to determine the relative demands for the resources. Each resources is then divided based on the policy of fairness based on willingness to pay for resources. A user interface is provided to allow the user to influence the allocation by changing the willingness to pay).

As to Claim 18, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the policy engine supports an expression language for policy definition (Kirkby et al. – Column 3, lines 47-49 recites the user expressing his/her willingness to pay which is used to define the fairness policy algorithm).

As to Claim 20, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the monitoring module performs one or more of determining resources available at each server computer, determining resource utilization at each server computer and exchanging resource utilization information amongst the plurality of computers (Kirkby et al. – Column 4, lines 3-13 recite bandwidth being allocated by each local controller taking into account the relative demands of all of the resources in the network; Alternatively, Kirkby et al. also recite in Column 3, lines 40-50 that a central controller can be used for monitoring in the non-distributed embodiment; Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 23, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the enforcement module performs one or more of allocating network bandwidth amongst said plurality of applications based upon the policy and information regarding demands for the resources, allocating processor resources amongst said

plurality of applications based upon the policy and information regarding demands for the resources and communicating with an external module for specifying allocation of resources by said external module (Kirkby et al. – Column 3, lines 37-52 recite the controller determining how the users' willingness to pay are to be divided between the resources in order to determine the relative demands for the resources. Each resources is then divided based on the policy of fairness based on willingness to pay for resources. A user interface is provided to allow the user to influence the allocation by changing the willingness to pay; Column 1, lines 6-13 recite the resources including network bandwidth resource).

As to Claim 26, the combination of Kirkby et al. and Watt discloses the system of claim 23,

wherein said external module includes one or more of a load balancer for load balancing instances of an application, a router and a provisioning device (Kirkby et al. - Column 6, lines 63-67 recite balancing the load after changes to the policy function inputs are received; Kirkby et al. – Column 5, lines 10-23 and Column 10, lines 9-14 recite the local network managers in the distributed system determining routing information which defines resources needed, and provisions the routing application).

As to Claim 28, the combination of Kirkby et al. and Watt discloses the system of claim 1,

wherein the enforcement module starts an instance of an application on a given server computer based upon the policy and information regarding demands for the resources (Kirkby et al. – Column 5, lines 10-23 and Column 10, lines 9-14 recite the local network managers in the distributed system determining routing information which defines resources needed, and provisions the routing application. The route is defined by applying the policy algorithm based on user priority input).

7. Claims 60, 61, 63, 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,766,348 B1 (Combs et al.), and further in view of US 2003/0069972 A1 (Yoshimura et al.) and US 2003/0126202 A1 (Watt).

As to Claims 60 and 71, Combs et al. disclose a method, and a system comprising: a server pool director for organizing and maintaining a plurality of servers, wherein the server pool director is distributed across a plurality of communicatively coupled servers, wherein each server comprises a processor and a computer-readable medium having processor executable instructions that, when executed by the processor, for allocating resources to a plurality of applications, comprising:

receiving user input specifying priorities of the plurality of applications to resources of the plurality of servers, the specified priorities including designated servers assigned to at least some of the plurality of applications (Combs et al. – Column 11, lines 4-6 and 35-36 and Column 10, lines 29-31 recite the user setting service priorities

for service applications and setting serving resources for each service application to be performed);

selecting a given application based upon the specified priorities of the plurality of applications (Combs et al. – Column 10, lines 32-34 recite the RAFS performing services in order of priority from highest to lowest);

allocating to the application resources located on one or more of the plurality of servers based on the policy for allocation of resources (Combs et al. – Column 11, lines 35-38 recite the allocation of resources and priority designated to the service task); and

repeating the steps of determining the demand for one or more resources, specifying a policy for allocation of resources, and allocating resources to the application for each of the plurality of applications based on the specified priorities (Combs et al. – Column 10, lines 32-34 recite the RAFS performing services in order of priority from highest to lowest).

Combs et al. do not explicitly disclose, but Watt discloses

providing a plurality of communicatively connected servers in a server pool (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

at a policy engine distributed amongst the plurality of communicatively connected servers in a multiprocessor computing environment (Watt – Page 4, ¶ [0049] recites the administrator {policy engine} for a set of servers in a server pool);

determining the demand for one or more resources located on each server in the plurality of communicatively connected servers (Watt – Page 6, ¶ [0091] recites determining the over and under-load conditions in a server pool);

specifying a policy for allocation of resources of the plurality of servers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool);

wherein a server pool director organizes and maintains the plurality of servers (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool); and

wherein a local workload manager component on each server regulates the resources on that server based on the allocation of resources determined by the policy engine (Watt – Page 4, ¶ [0049] recites the server pool load manager making decisions based on policy created by the administrator {policy engine} for a set of servers in a server pool).

The combination of Combs et al. and Watt do not explicitly disclose, but Yoshimura et al. disclose

allocating additional resources to the application until the application's demands for resources are satisfied (Yoshimura et al. – Figure 32, items 3201, 3202, 3209, 3210, 3212, 3214 and 3216 recite the iterative process of adding available application compatible servers {resources} until demands are met or until the service level agreement is maximized).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine determining the demand for one or more resources located on each server in a plurality of communicatively connected servers; and specifying a policy for allocation of resources of the plurality of servers taught by Watt, with allocation of resources taught by Combs et al., in order to streamline resource allocation an provisioning process (Watt – Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine allocating additional resources to the application until the application's demands for resources are satisfied taught by Yoshimura et al., with allocating to the application any available servers which are designated servers assigned to the application; and repeating above steps for each of the plurality of applications based on the specified priorities taught by the combination of Combs et al. and Watt.

One of ordinary skill in the art at the time the invention was made would have been motivated to reduce the load of the managers of a data center and a user when a network is changing dynamically (Yoshimura et al. – Page 1, ¶ [0010]).

As to Claim 61, the combination of Combs et al., Yoshimura et al. and Watt discloses the method claim 60,

wherein the receiving step includes receiving user input of a value for a given application representing relative priority of the given application compared to other applications (Combs et al. – Column 11, lines 4-6 and 35-36 and Column 10, lines 29-

31 recite the user setting service priorities for service applications and setting serving resources for each service application to be performed).

As to Claim 63, the combination of Combs et al., Yoshimura et al. and Watt discloses the method of claim 60,

wherein the step of selecting a given application includes commencing with selection of an application having the highest priority (Combs et al. – Column 10, lines 32-34 recite the RAFS performing services in order of priority from highest to lowest).

As to Claim 70, the combination of Combs et al., Yoshimura et al. and Watt discloses the method of claim 60,

wherein said allocating step includes starting an instance of an application on a given computer (Yoshimura et al. – Figure 32, items 3210-3215 recites the allocation of the server and startup of the application on the allocated server).

The motivation and obviousness arguments are presented in Claim 60.

8. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Combs et al., Yoshimura et al. and Watt as applied to claim 60 above, and further in view of US 2005/0177755 A1 (Fung).

As to Claim 64, the combination of Combs et al., Yoshimura et al. and Watt discloses the method of claim 60, further comprising one or more steps of:

powering on a server allocated to an application if the server is in a powered off state (Yoshimura et al. – Figure 32, item 3212 recites turning on a server to be allocated to an application; Item 3207 recites turning off a server de-allocated from an application),

adding a server newly allocated to an application to a set of servers across which the application is allocated (Yoshimura et al. – Figure 32, item 3214 and 3215 recite updating the VLAN table with the added server; Abstract recites VLAN load balancing),

removing a server no longer allocated to an application from a set of servers across which the application is allocated (Yoshimura et al. – Figure 32, item 3212 recites turning on a server to be allocated to an application; Item 3207 recites turning off a server de-allocated from an application; Abstract recites VLAN load balancing),

determining whether an application is inactive on a server allocated to the application (Yoshimura et al. – Figure 32, items 3201 and 3202 recite determining the activity of a server),

determining whether a server no longer allocated to an application is in a set of servers designated for the application (Yoshimura et al. – Figure 32, items 3201 and 3202 recite determining the activity of a server).

The combination of Combs et al., Yoshimura et al. and Watt does not explicitly disclose, but Fung discloses initiating a resume script for running the application on the server application is determined to be inactive (Fung - Page 5. ¶ [0038] recites issuing the resume command of an inactive server);

and running a suspend script if the server is determined to be in the set of servers (Fung – Page 17, ¶ [0133] recites running the suspend function on a node to put it into the suspend state); and

if a suspend script is executed on the server, determining whether the server should be powered off based on consulting a power management rule and powering off the server if it determined that the server should be powered off (Fung - ¶ [0134] recites placing the service into the Mode 3 state; Page 3, ¶ [0027] recites the decision to place a server into Mode 3; Fung - ¶ [0134] recites placing the service into the Mode 3 state).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine initiating a resume script for running the application on the server application is determined to be inactive, and running a suspend script if the server is determined to be in the set of servers, and if a suspend script is executed on the server, determining whether the server should be powered off based on consulting a power management rule and powering off the server if it determined that the server should be powered off taught by Fung, with allocating any additional available servers to the given application until the given application's demands for resources are satisfied taught by the combination of Combs et al., Yoshimura et al. and Watt.

One of ordinary skill in the art at the time the invention was made would have been motivated to provide power management in a multi-server environment (Fung – Page 1, ¶ [0002]).

Examiner Notes

9. The specification section beginning at ¶ [0069], "Policy engine and application of scripted policies", appears to have specific policy implementation details that are not claimed (e.g. in ¶¶ [0081-0082]). Inclusion of these details, in independent form and in sufficient detail may overcome the cited prior art of reference.

10. The aforementioned recommendations do not necessarily indicate allowable subject matter. Further search and/or reconsideration may be required depending on any response. The recommendations are presented to assist in advancing prosecution. Any decision on whether the aforementioned recommendations overcome the prior art will need to be determined after seeing any proposed amendments and/or arguments.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These were disclosed in a prior Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD G. KEEHN whose telephone number is (571)270-5007. The examiner can normally be reached on Monday through Thursday, 8am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RGK

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2456